# May 1, 2011 Water Supply Forecast Discussion

This forecast includes observed conditions through the end of April, 2011.
These forecasts are posted at:

B120: http://cdec.water.ca.gov/cgi-progs/iodir?s=b120
WSI: http://cdec.water.ca.gov/cgi-progs/iodir/wsi.

**Forecast Summary:**

The projected median April-July runoff in the Sierra river basins ranges from 119 percent for the Pit River to 203 percent for the East Walker River. The South Lahontan and the Tule Lake regions have the greatest number of river basins over 180 percent of normal. Considering all major Sierra rivers, the forecast calls for an April-July runoff of nearly 162 percent of average, which is a 2% decrease from last month. The forecasted median Water Year (WY) runoff in the Sierra river basins ranges from 109 percent of average for the Inflow into Shasta Reservoir to 189 percent for the Cosumnes River.

April was not typical with regards to precipitation and snow ablation. Statewide precipitation was 65 percent of normal for the month. The snowpack has experienced little ablation this April due to the persistent cool temperatures and cloudy days. The statewide May 1 snow course average was 144 percent of the April 1 average. This reflects a small decrease since April 1.

This WSI forecast can be summarized as follows:

| | |
|---|---|
| **Sacramento River Unimpaired Runoff Water Year Forecast** | **23.9 MAF** |
| (50 percent exceedance) | (128 percent of normal) |
| **Sacramento Valley Index (SVI)** | **10.0** |
| (50 percent exceedance) | (Wet) |
| **San Joaquin Valley Index (SJI)** | **5.1** |
| (75 percent exceedance) | (Wet) |

The SVI and SJI of 10 and 5.1 remained the same as the April 1 WSI. However, the SRR increased slightly to 23.9 from 23.8 MAF.

**Runoff:**

Regional Sierra flows for April in the Sacramento, San Joaquin and Tulare Lake regions were 164, 168 and a 132 percent of average, respectively. Flows for individual rivers in these regions ranged between 128 and 241 percent of average. April flows exceeded 200 percent of average for two rivers (Cosumnes and Kern). The Kern River April runoff was the 2nd greatest runoff on record.

Runoff to date (October to April) in the Sacramento, San Joaquin and Tulare Lake regions were 121, 180, and a 169 percent of average, respectively. The Pit River had the lowest runoff to date at 97 percent of average.

**Precipitation:**

For April, the Northern Sierra 8-Station Precipitation index gained 3.2 inches (81 percent of the monthly average). This accumulation brought the water year-to-date total in the Northern Sierra to 64.4 inches (141 percent of average to date and 19.4 inches for the seasonal water to date average). Similarly, the San Joaquin 5-Station Precipitation Index gained 1.7 inches in April (49

percent of the monthly average). This brought the water year-to-date total to 57.7 inches (155 percent of average to date and 20.5 inches for the seasonal water to date average).

From a regional perspective, accumulated precipitation (based on all available precipitation stations) during April in the Sacramento, San Joaquin and Tulare Lake regions were all below average at 75, 36 and 40 percent of normal, respectively. However, the percent of average to date for the Sacramento, San Joaquin, and Tulare Lake regions remain above average at 136, 145 and 150, respectively. Statewide, the October to April precipitation was 133 percent of average.

**Snowpack:**

On May 1, snow sensors recorded a snow pack that was 224 percent of average to date in the Northern Sierra, 181 of average to date in the Central Sierra, and 155 percent of average to date in the Southern Sierra. Statewide, snow water equivalent based on snow pillow data was 186 percent of average to date and 144 percent of the historic April 1 average.

Measurements from snow courses, based on May 1 surveys, indicate that the pack was 202 percent of average to date in the Northern Sierra, 189 percent of average to date in the Central Sierra, and 182 percent average to date in the Southern Sierra. Statewide, these measurements indicated the snow water equivalent to be 187 percent of average to date and 144 percent of the historic April 1 average.

The snow line (The snow line the elevation at which the snow space covered area begins) was between 5,000 to 6,000 feet statewide on May 1. The snow-pack is still expansive and deep as identified by the snow sensors and snow course measurements conducted statewide and will provide substantial runoff in the months to come.

**Weather and Climate Outlook:**

The weather forecast for the next six days will continue to be dry. Expect temperatures to rise in the Sierras within the next two days. Due to these increasing temperatures the freezing levels over the northern Sierra will rise from near 7,000 feet to over 10,000 feet, then decline again by the last day of the period, Saturday, May 14, 2011. Current freezing levels over the southern Sierra are from 6000 – 7000 feet and are expected to rise to over 11,000 feet by Wednesday then decline by the last day of the period.

The Climate Prediction Center's (CPC) one-month outlook for May updated on April 30, suggests above normal temperatures for the southern third of the state. The same outlook suggests above normal precipitation over the far northwest corner of the state and below normal precipitation for the southern quarter of the state.

The CPC's three-month outlook (May-July, updated April 21) suggests equal chances of above or below normal precipitation over the entire state. The same forecast indicates above normal temperatures over the far southern end of the Sierra and the Mojave Desert.

The latest EL NIÑO/SOUTHERN OSCILLATION (ENSO) discussion by the Climate Prediction Center states current observed trends, along with forecasts from nearly all of the ENSO models, indicate La Niña will continue to weaken in the coming months, with a return to ENSO-neutral during May-June-July 2011.

**Next Update:**

A Bulletin 120 Update for conditions on May 10, 2011 will be available Thursday, May 12. If you have any questions regarding this forecast, please contact a member of the Snow Surveys staff.

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**Important Links**

**Full Natural Flow Data**:
Daily FNF
http://cdec.water.ca.gov/cgi-progs/reports/FNF
Monthly FNF
http://cdec.water.ca.gov/cgi-progs/reports/FNFSUM
Seasonal FNF
http://cdec.water.ca.gov/cgi-progs/reports/FLOWOUT

**Precipitation Data:**
Northern Sierra 8-Station Precipitation Tabulation Table
http://cdec.water.ca.gov/cgi-progs/products/8-Stations_Tab.pdf
San Joaquin 5-Station Precipitation Tabulation Table
http://cdec.water.ca.gov/cgi-progs/products/5-Stations_Tab.pdf
2010 WY Precipitation Summary
http://cdec.water.ca.gov/cgi-progs/precip/PRECIPSUM

**Snow Data:**
Latest Snow Sensor Report
http://cdec.water.ca.gov/cgi-progs/snow/PAGE6
Latest Statewide Summary of Snow Water Equivalents
http://cdec.water.ca.gov/cgi-progs/snow/DLYSWEQ
Monthly Snow Course Report
http://cdec.water.ca.gov/cgi-progs/snow/COURSES

**Extended Regional Forecasts:**
California Nevada River Forecast Center 6 Day QPF and Snow Level Forecast
http://www.cnrfc.noaa.gov/awipsProducts/RNOHD6RSA.php
Climate Prediction Center One-Month Outlook Forecasts
http://www.cpc.noaa.gov/products/predictions/30day/
Climate Prediction Center Three-Month Outlook Forecasts
http://www.cpc.noaa.gov/products/predictions/90day/

**Drought Information:**
U.S. Seasonal Drought Outlook
http://www.cpc.ncep.noaa.gov/products/expert_assessment/seasonal_drought.html

**El Nino/La Nina:**

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/